In the Claims:

1. (currently amended) A method for evaluating measuring signals of an electromagnetic field which is in interaction with an electrically conductive fluid for detecting components in the fluid which differ with respect to the electric conductivity of the fluid, characterized in that the measuring signals are divided into at least two channels and are evaluated in order to detect different distributions and concentrations in the ~~fluid.~~ fluid, characterized in that the electromagnetic field is generated by at least one transmitter coil flowed through by an alternating current, the fluid is a flowing metallic melt and is penetrated at least partly by the field at a measuring point flowed through by the melt and entrained non-metallic components are detected at the measuring point by means of disturbances in the field, with non-metallic components which are entrained in a contiguous fashion in a manner expanded in a direction of flow of the melt being detected in the melt on the basis of disturbances in the electromagnetic field in a first channel above a lower cut-off frequency f_{Gu}, and simultaneously components distributed discretely in the melt being detected in the melt in a second channel above an upper cut-off frequency f_{Go}.

Claim 2 (canceled).

3. (currently amended) The method as claimed in claim [[~~2,~~]] 1, characterized in that the flowing metallic melt is a steel melt flowing from a metallurgical vessel and the non-metallic components are slag and/or gases.

4. (currently amended) The method as claimed in claim [[~~2,~~]] 1, characterized in that a product of the upper cut-off frequency f_{Go} and [[~~the~~]] a flow speed v of the flowing metallic melt is ~~between~~ from 0.1 m/s^2 to 10 m/s^2 at the measuring point.

5. (currently amended) The method as claimed in claim [[~~2,~~]] 1, characterized in that a product of the lower cut-off frequency f_{Gu} and [[~~the~~]] a flow speed v of the flowing metallic melt is ~~between~~ from 0.001 m/s^2 to 0.01 m/s^2 at the measuring point.

6. (currently amended) The method as claimed in claim 1, characterized in that ~~a disturbance of~~ the disturbances in the electromagnetic field generated by [[~~a~~]] the at least one transmitter coil [[~~is~~]] are detected on the basis of ~~a disturbance~~ disturbances of the voltage induced in a receiver coil.

7. (original) An apparatus for detecting non-metallic components in a flowing metallic melt with at least one transmitter coil which is flowed through by an alternating current for generating an electromagnetic field which

penetrates the flowing melt at least partly, a measuring element for measuring disturbances of the field at a measuring point which is flowed through by the melt and with an evaluating device, characterized by a first filter element which guides the disturbances of the electromagnetic field above a lower cut-off frequency f_{Gu} into a first channel with which non-metallic components can be detected which are entrained by the melt and are expanded especially in the direction of flow, and by a second filter element which guides the disturbances of the electromagnetic field above an upper cut-off frequency f_{Go} into a second channel with which components can be detected which are distributed in the melt and are entrained in a discrete manner.

8. (original) The apparatus as claimed in claim 7, characterized by a summing element in at least one channel, in which the measured values detected in the channel are summed up into a summary value and by an amplitude filter which triggers a signal when the summary value exceeds a limit amplitude.

9. (original) The apparatus as claimed in claim 7, characterized in that the product of upper cut-off frequency f_{Go} and a flow speed v is between 0.1 m/s^2 to 10 m/s^2 at the measuring point.

10. (original) The apparatus as claimed in claim 7, characterized in that the product of lower cut-off frequency f_{Gu} and the flow speed v is between 0.001 m/s^2 to 0.01 m/s^2 at the measuring point.

11. (original) The apparatus as claimed in claim 7, characterized in that a measuring element is a receiver coil and that disturbances of the electromagnetic field at a measuring point can be detected on the basis of disturbances of the voltage induced in the receiver coil.

12. (original) The apparatus as claimed in claim 7, characterized in that the transmitter coil can also be flowed through by the melt.

13. (original) The apparatus as claimed in claim 7, characterized in that the transmitter coil is simultaneously the measuring element.

14. (original) The apparatus as claimed in claim 11, characterized in that the transmitter and/or receiver coil are each individually arranged in a metallic housing which is at least partly non-ferromagnetic.

15. (original) The apparatus as claimed in claim 11, characterized in that the transmitter and receiver coils are arranged in a common metallic housing which is at least partly non-ferromagnetic.

16. (original) The apparatus as claimed in claim 11, characterized in that the transmitter and receiver coil are axially spaced from each other and are separated from each other by a metallic wall and either both coils are arranged in a common housing or each coil is housed in a separate housing, with the housing(s) consisting of a metallic material and the metallic material being non-ferromagnetic at least in sections.

17. (original) The apparatus as claimed in claim 11, characterized in that the transmitter and receiver coils are integrated in at least one section of the pouring channel of a metallurgical vessel.

18. (original) A method of using the apparatus as claimed in claim 7, for initiating a warning signal and/or a control signal for triggering a flow control device and/or a device for modifying the flow of the metallic melt when detecting discrete and/or contiguous impurities.

[RESPONSE CONTINUES ON NEXT PAGE]